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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
RYMAN, DANIEL J	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 08/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/841,943	NGUYEN ET AL.	
	Examiner	Art Unit	
	Daniel J. Ryman	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 April 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: ref. 301, 305, 307, and 309 (Fig. 9A and para. 62); ref. 343 (Fig. 10A and para. 63); ref. 343, 363, 365, 367, 369, 371, and 373 (Fig. 10B ad para. 64); ref. 507 (para. 67); ref. 539 and 545 (para. 68); and ref. 561 (para. 69). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Figures 1 and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: para. 66, line 8, "software 451 and 543" should be "software 451 and 453" in order to comply with Fig. 11B.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-7, 9-17, 19, 20, 30-37, and 39-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Muller et al. (USPN 6,389,468).

6. Regarding claims 1, 11, and 31, Muller discloses a method of and system for processing data which is communicated over a computer network (col. 6, lines 20-32), said method comprising the steps of and said system comprising means for: processing a first group of network packets (packets in same communication flow) in a first processor which executes a first network protocol stack (col. 4, lines 7-31), said first group of network packets being communicated through a first network interface port (col. 4, lines 7-31); processing a second group of network packets in a second processor which executes a second network protocol stack, said second group of network packets being communicated through said first network interface port (col. 4, lines 7-31).

7. Regarding claims 2, 12, and 32, Muller discloses that the first network protocol stack and said second network protocol stack are separate processing threads (col. 51, lines 18-38).

8. Regarding claims 3, 13, and 33, Muller discloses that the separate processing threads each comprise separate operating system software processing logic (col. 51, lines 18-38).

9. Regarding claims 4, 14, and 34, Muller discloses that the first network protocol stack and said second network protocol stack use the same network protocols (col. 6, lines 35-55).

10. Regarding claims 5, 15, and 35, Muller discloses that the same network protocols comprise at least one of (a) an Internet Protocol (IP) and (b) a Transmission Control Protocol (TCP) (col. 4, lines 44-46 and col. 6, lines 43-55).

11. Regarding claims 6, 16, and 36, Muller discloses that the first group of network packets are associated with a first network session between a host processing system and a first digital processing system and said second group of network packets are associated with a second network session between said host processing system and a second digital processing system (col. 4, lines 7-31 and col. 13, lines 33-38).

12. Regarding claims 7, 17, and 37, Muller discloses that said processing of said first group comprises receiving first packet header data from said first network interface port and transmitting first application data associated with said first packet header data to a host processing system (col. 55, lines 21-39); said processing of said second group comprises receiving second packet header data from said first network interface port and transmitting second application data associated with said second packet header data to said host processing system (col. 55, lines 21-39).

13. Regarding claims 9, 19, and 39, Muller discloses that the first network interface port comprises an Ethernet interface (col. 6, lines 43-55).

14. Regarding claims 10, 20, and 40, Muller discloses that the first group of network packets are assigned to said first processor through a programmable hashing operation on said first group of network packets and wherein said second group of network packets are assigned to said second processor through said programmable hashing operation (col. 4, lines 19-31).

15. Regarding claim 30, Muller discloses that the first processor and said second processor are general purpose, programmable processors (col. 51, lines 19-51).

16. Regarding claims 41, 42, and 43, Muller discloses that the first network protocol stack and said second network protocol stack use different network protocols (col. 10, lines 53-61).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 8, 18, 38, and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. (USPN 6,389,468).

19. Regarding claims 8, 18, and 38, Muller does not expressly disclose that said processing of said first group comprises receiving first application data from a host processing system and preparing a first packet header data associated with said first application data and causing said first application data and said first packet header data to be transmitted over said computer network through said first network interface port; said processing of said second group

comprises receiving second application data from said host processing system and preparing a second packet header data associated with said second application data and causing said second application data and said second packet header data to be transmitted over said computer network through said first network interface port. However, Muller discloses that said processing of said first group comprises receiving first packet header data from said first network interface port and transmitting first application data associated with said first packet header data to a host processing system (col. 55, lines 21-39); said processing of said second group comprises receiving second packet header data from said first network interface port and transmitting second application data associated with said second packet header data to said host processing system (col. 55, lines 21-39). Muller also discloses that the receiver performs the reverse process of the transmitter (col. 2, lines 21-35 and col. 7, lines 7-11). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the processing of said first group comprise receiving first application data from a host processing system and preparing a first packet header data associated with said first application data and causing said first application data and said first packet header data to be transmitted over said computer network through said first network interface port; and to have said processing of said second group comprise receiving second application data from said host processing system and preparing a second packet header data associated with said second application data and causing said second application data and said second packet header data to be transmitted over said computer network through said first network interface port in order to transmit packets from a high performance network interface.

20. Regarding claims 44 and 45, Muller suggests processing a third group of network packets in said first processor which executes said first network protocol stack, said third group of network packets being communicated through a second network interface port. Muller discloses processing a group of network packets in a first processor which executes a first network protocol stack, where the group of network packets being communicated through a second network interface port (col. 4, lines 7-31). Muller also discloses that the network device can have multiple ports (col. 6, lines 63-67 and col. 6, lines 16-19). Muller further discloses that a processor that does not have work to do will be idle (col. 51, lines 18-30). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to process a third group of network packets in said first processor which executes said first network protocol stack, said third group of network packets being communicated through a second network interface port in order to ensure that each processor is efficiently used such that the processor is not idle.

21. Regarding claim 46, Muller suggests that said first processor and said second processor are coupled to a further host processing system. Muller discloses that the processor is used to transfer packets from the network interface to the host (col. 7, lines 1-11). Muller also discloses that the host system can become "overburdened" with packets (col. 3, lines 12-14 and col. 3, lines 44-50). Muller further discloses that the distributing processing can yield processing gains (col. 3, lines 30-43). Thus, Muller suggests coupling the first processor and the second processor to a further host processing system in order to ensure that the host processing system can handle the high traffic loads of a fast interface.

22. Claims 21-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. (USPN 6,389,468) as applied to claim 11 above, and further in view of Sinks et al. (USPN 5,206,935).

23. Regarding claim 21, Muller discloses connecting a first processor, a second processor and a network interface port (col. 4, lines 7-31 and col. 7, lines 1-11); a first memory (ref. 116: queue) coupled to the processors and the port (col. 8, lines 23-32); a first memory controller (ref. 104: IPP) coupled to the first memory, at least a portion of said first group of network packets and a portion of said second group of network packets being stored in said first memory (col. 8, lines 23-32).

Muller does not expressly disclose that a first bus is used to couple the processors, memory, and memory controller. However, Muller does disclose the use of a bus in the system (col. 50, lines 46-54). Sinks teaches, in a multi-processor system, coupling the components of a multi-processing system using a bus (col. 1, lines 31-33; col. 1, line 68-col. 2, line 3; and col. 4, lines 37-48) where "coupled" includes direct and indirect coupling. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to couple the processors, memory, and memory controller since it is well known to couple the components of a multi-processor system using a bus.

24. Regarding claim 22, Muller in view of Sinks suggests a host bus interface coupled to said first bus; a second bus coupled to said host bus interface; a second memory coupled to said second bus; a second memory controller coupled to said second bus and to said second memory; a host processor coupled to said second bus and to said second memory (Muller: col. 4, lines 7-

31 and col. 7, lines 1-11 and Sinks: col. 1, lines 31-33; col. 1, line 68-col. 2, line 3; and col. 4, lines 37-48) in order to increase the number of ports connected to the host bus.

25. Regarding claim 23, Muller in view of Sinks discloses that the first processor, said second processor, said first bus and said first memory controller are all fabricated on a single integrated circuit (Sinks: col. 5, lines 5-9).

26. Regarding claim 24, Muller in view of Sinks discloses that before said first processor executes said first network protocol stack to process said first group of network packets, said portion of said first group is stored in said first memory (packet queue) (Muller: col. 55, lines 7-39). Muller in view of in view of Sinks discloses also discloses the use of a first direct memory access (DMA) operation to transfer data to a memory (Muller: col. 55, lines 7-20 and Sinks: col. 2, lines 34-39). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a DMA to transfer the data to the first memory since DMA is used to transfer data to a memory.

27. Regarding claim 25, Muller in view of Sinks discloses that after said first processor executes said first network protocol stack to process said first group, said portion of said first group is stored in said second memory (buffers in host memory) through a second DMA operation (Muller: col. 55, lines 7-39).

28. Regarding claim 26, Muller in view of Sinks discloses that the portion of said first group and said portion of said second group are stored in said first memory in pre-allocated portions of said first memory (Muller: col. 8, lines 23-32 and col. 55, lines 7-20).

29. Regarding claim 27, Muller in view of Sinks discloses first dispatch logic coupled to said network interface port and to said first bus, said first dispatch logic assigning said first group to

said first processor through a programmable hashing operation on said first group (Muller: col. 4, lines 19-31).

30. Regarding claim 28, Muller in view of Sinks discloses that the first dispatch logic assigns said second group to said second processor through a programmable hashing operation (Muller: col. 4, lines 19-31).

31. Regarding claim 29, Muller in view of Sinks discloses second dispatch logic coupled to said first bus and to said host bus interface, said second dispatch logic assigning packets from said second bus to one of said first processor or said second processor (Muller: col. 4, lines 19-31).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 7:00-4:30 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman
Examiner
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